



# **An Update on IOOS Related Archive Activities**

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# A Lot Is Going On...

- Adoption and growing conformance to the **Open Archival Information System Reference Model**
- Passage and *implementation* of the **NOAA Procedure for Scientific Records Appraisal and Archive Approval**
- Progress in **unified cross-Data Center metadata management**
- And more...



# The OAIS Reference Model

- The CCSDS and ISO Standard (14721) for Digital Archives
- Applies to all organizations that need to preserve digital information for the long-term
- Does NOT specify any particular implementation
- An organization *conforms* to the OAIS RM by discharging a minimal set of responsibilities and supporting basic information concepts

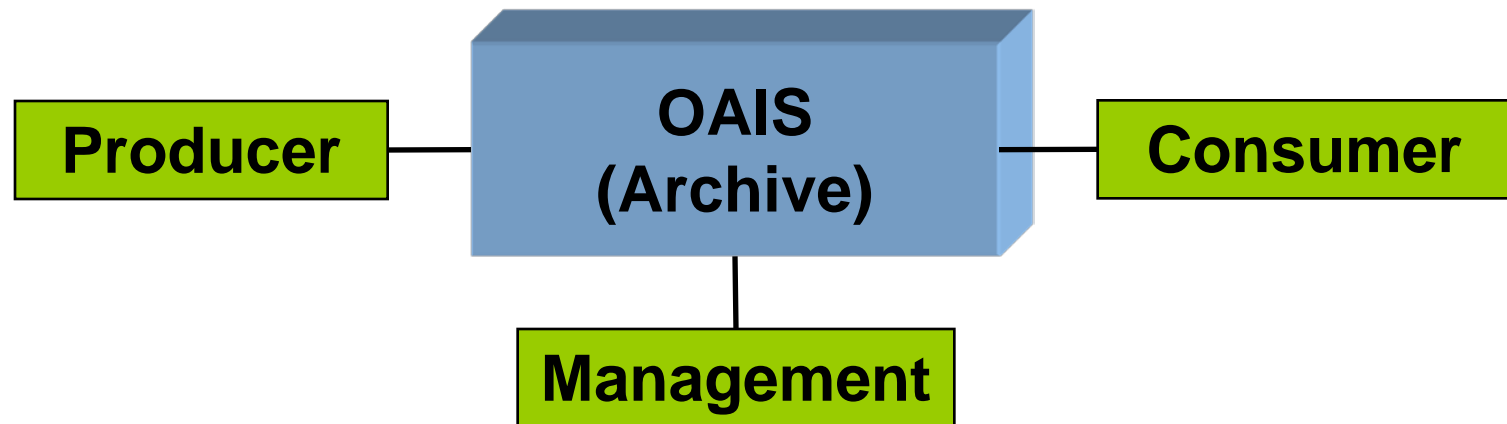


# An OAIS Archive...

- Negotiates and accepts information from **Producers**
- **Obtains sufficient control** to ensure long-term preservation
- Ensures the information to be preserved is **independently understandable** to identified **Designated Communities**
- **Follows** documented **policies and procedures** to insure information is preserved
- **Provides information** to the Designated Communities in understandable forms

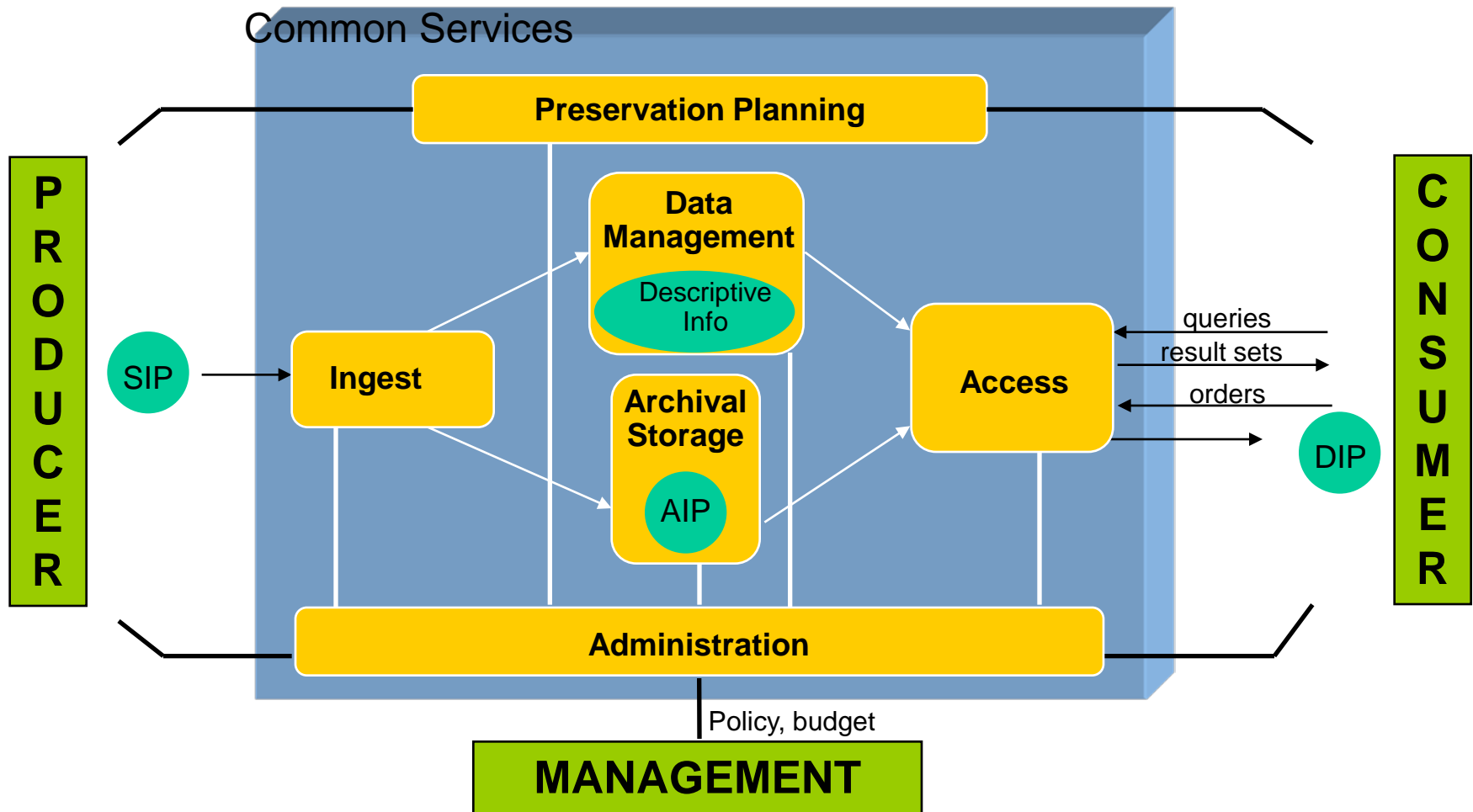
# The OAIS Environment

- ***Producer*** provides information to be preserved
- ***Management*** sets overall policy
- ***Consumer*** seeks and acquires preserved information



The OAIS Environment from 30,000 ft

# OAIS Functional Entities



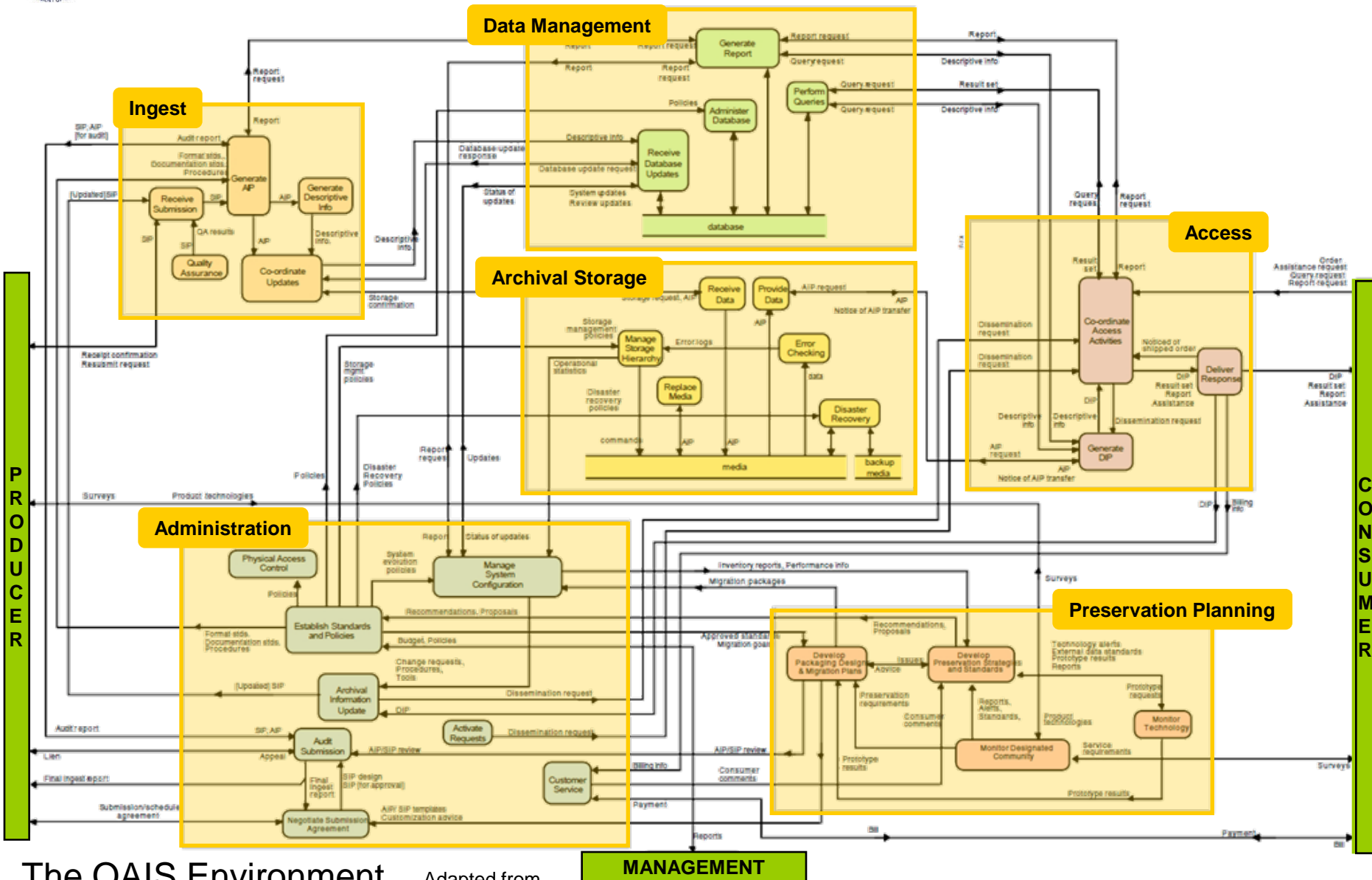
SIP = Submission Information Package

AIP = Archival Information Package

DIP = Dissemination Information Package

The OAIS Environment  
from 10,000 ft

# OAIS Functional Entities



The OAIS Environment  
from Sea Level

Adapted from

Figure F-1: Composite of Functional Entities



**In other words, an Archive is a whole lot more than a couple copies of data on your shelf**



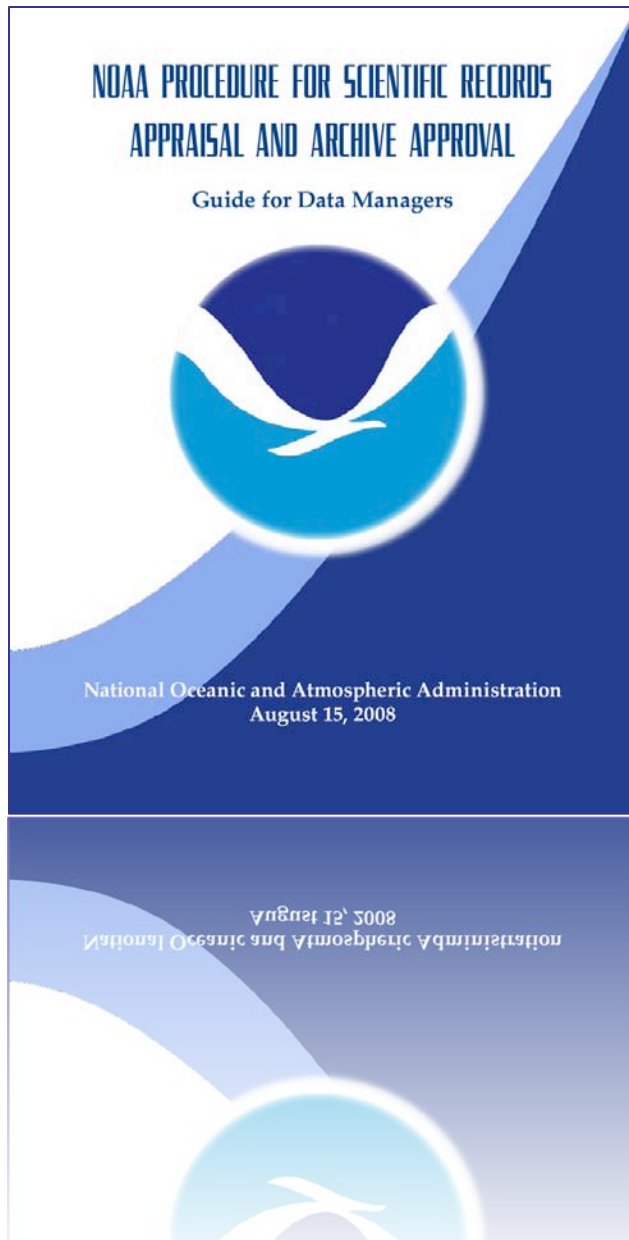


# Why Should IOOS Care?

- The OAIS-RM provides the *lingua franca* – finally we can all talk to one another!
- The OAIS-RM provides a robust collection of archive functions – great for “gap analysis” and to help us all agree on what an Archive is and does
- Adoption and conformance to the OAIS-RM is structuring the way the three NOAA Data Centers, other non-NOAA archives, CLASS, the DMC, the DMIT, and the Archive Architecture Team think, talk, and act...



# NOAA Procedure for Archive Approval

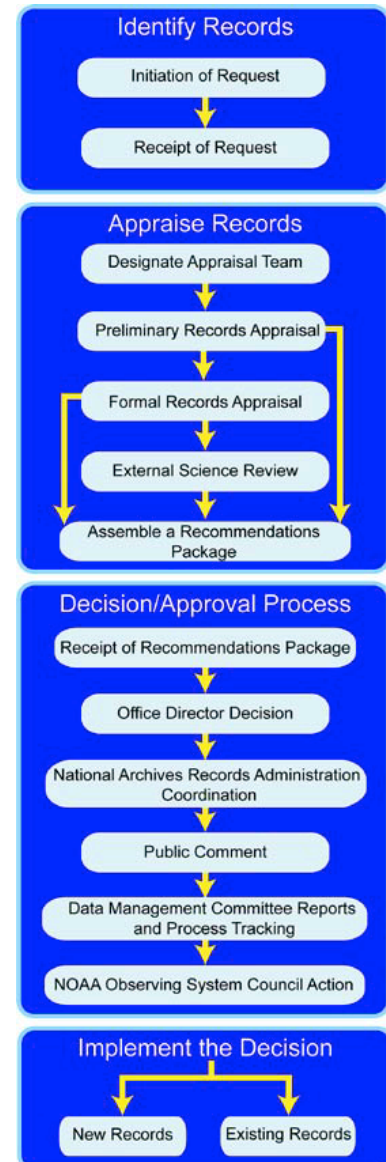


**Identify**

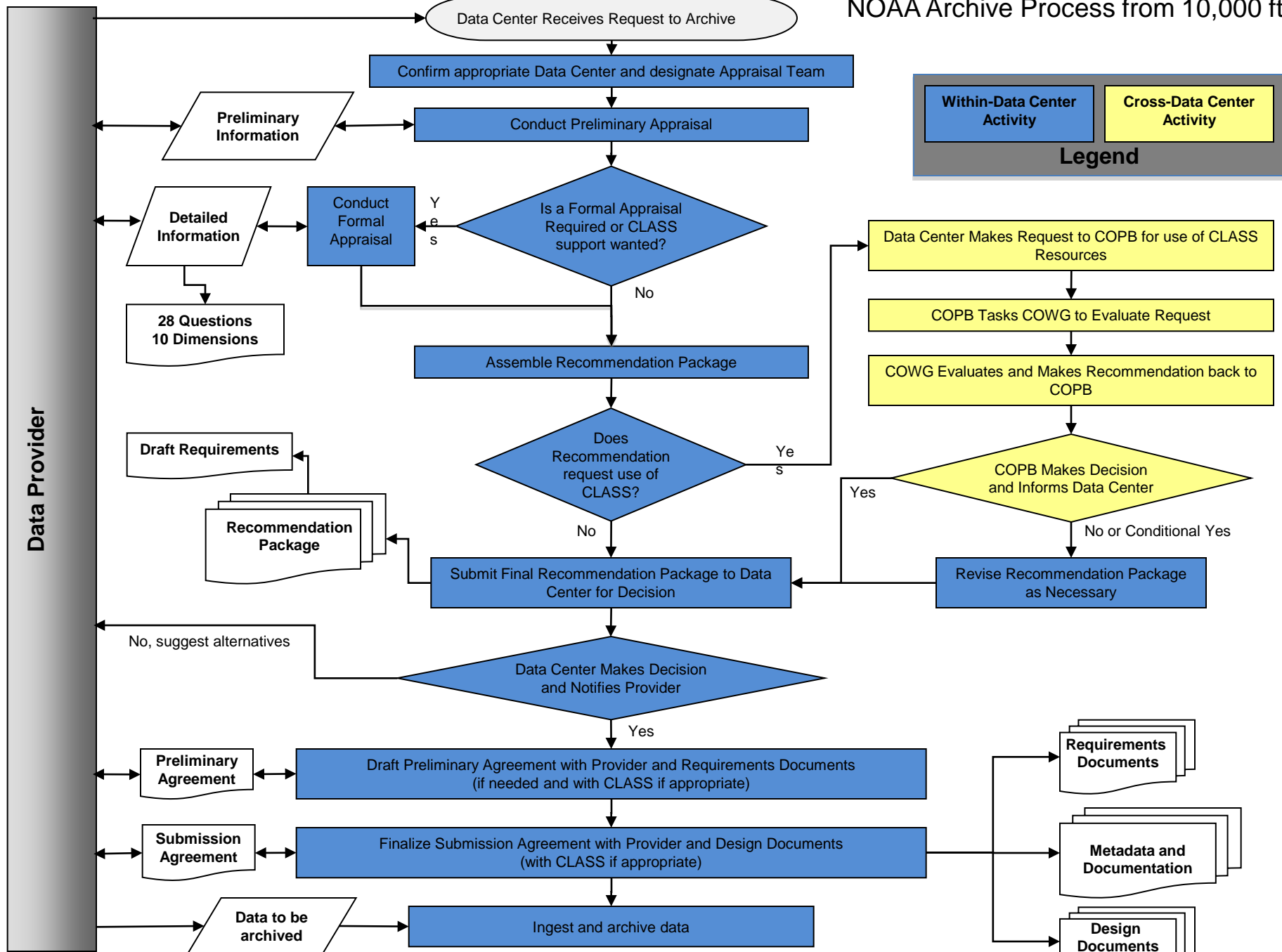
**Appraise**

**Decide**

**Implement**

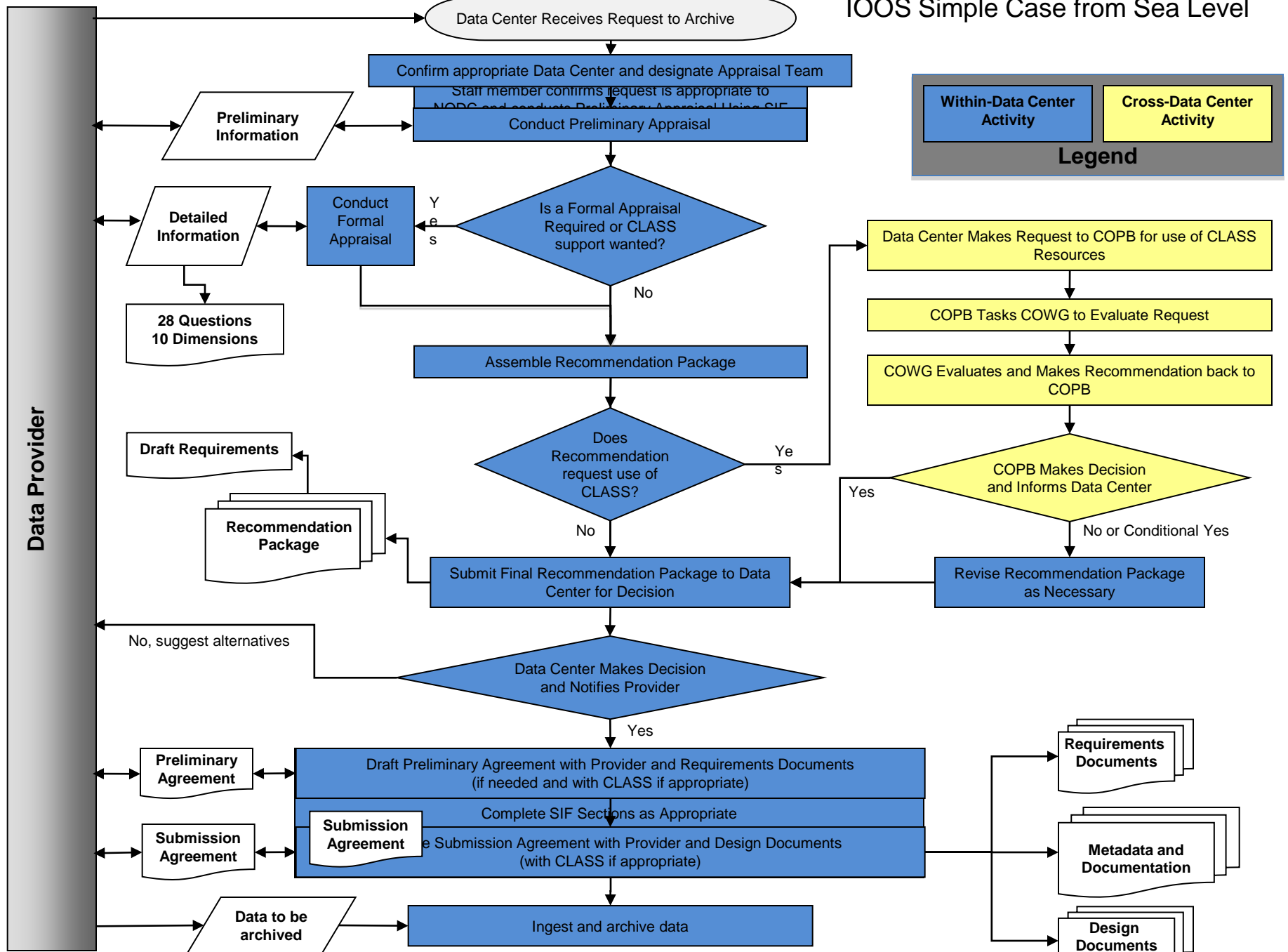


# NOAA Archive Process from 10,000 ft.



DRAFT FOR DISCUSSION

# IOOS Simple Case from Sea Level



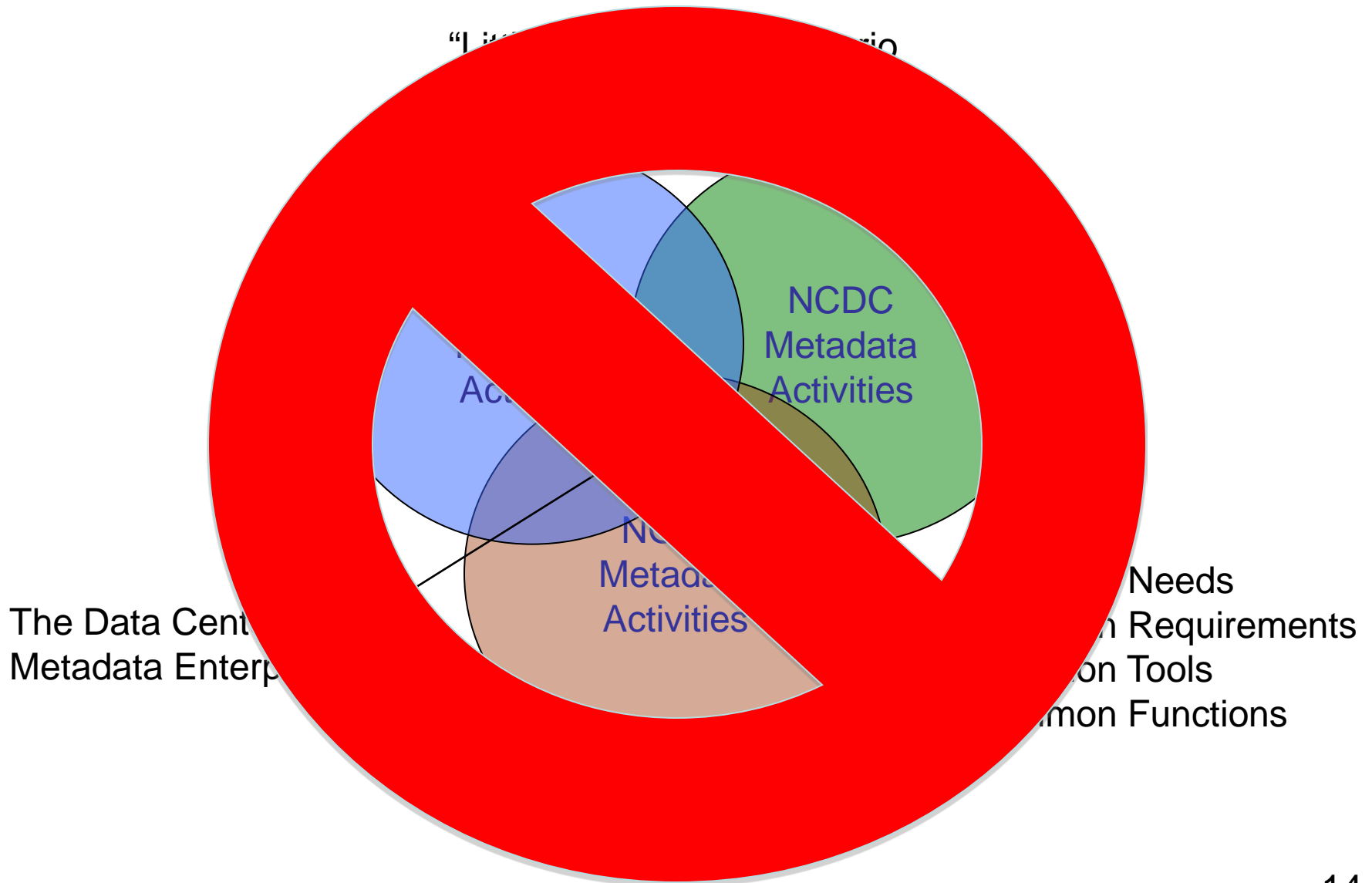
DRAFT FOR DISCUSSION



# Cross-Data Center Metadata

- During 2009 the three NOAA Data Centers worked together to define an “Enterprise Metadata System”, toward which we could all work
- We began by evaluating our common needs, requirements, tools, and metadata functions...

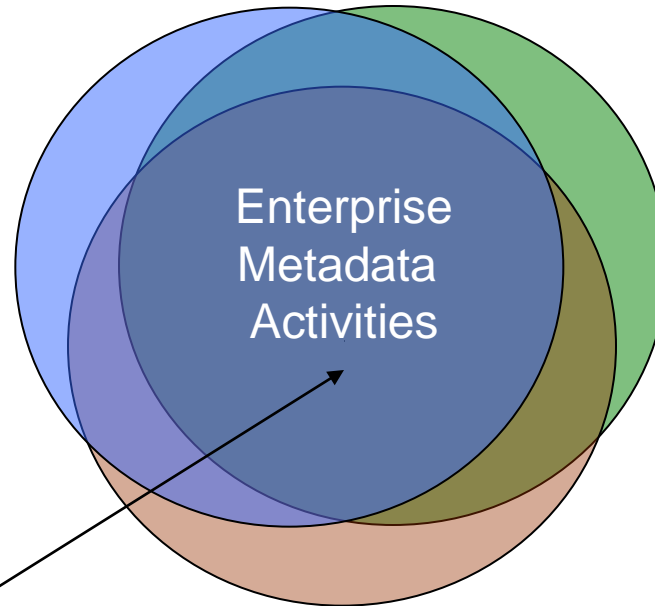
# The Metadata Enterprise





# The Metadata Enterprise

“Lots in common” Scenario



The Data Center  
Metadata Enterprise

Common Needs  
Common Requirements  
Common Tools  
Common Functions



# Enterprise Functions

## The Data Center Enterprise Metadata System

### Metadata Manipulation Functions

**Import**

**Convert**

**Export**

**Validate**

**Publish**

**Edit**

### Management/Admin Functions

**Manage Controlled  
Vocabularies**

**Manage  
Components**

**Manage DM  
Data**

**Support Queries**

**Generate  
Reports**

**Control  
Access**

**Manage  
Workflow**

**Link to Archival  
Storage**

**Handle  
Versions**

**Minimize  
Duplicates**

### System-Wide or Cross-Cutting Functions/Requirements

**Support Human (GUI) and  
Machine (API) Interfaces**

**Support  
Standards**

**Support Collections  
and Granules**





# Cross-Data Center Metadata

- Near Term (FY09)
  - Create a cross-Data Center FGDC catalog
    - web accessible folder, WAF, hosted at NODC
    - FAQ/HTML/TXT views with USASearch.gov/Google Search
  - Inventory vocabularies used across the Data Centers
  - Identify all metadata components (e.g., Contact List, Distributor, Source,...)
  - Hold follow-on technical meeting (later this month) to identify technical path forward
- Mid Term (Q2FY10)
  - Time series metadata
  - Add ISO view to consolidated WAF
  - Identify vocabularies ripe for consolidation
- Long Term (Beyond)
  - Follow both Development and Implementation Plans to get us to the “enterprise” system



# Why Should IOOS Care?

- The consolidated metadata catalog and enhanced search/discovery/access capabilities being deployed will directly benefit “IOOS data” archived at NODC
- Eventually, the tools and capabilities may be deployable by IOOS partners, thereby assisting in their metadata efforts



# And much more...

- Increasing use of submission agreements (SAs)/submission information forms (SIFs)
- Progress at NODC on conformance with WMO Information System (WIS) and WMO Integrated Global Observing System (WIGOS) requirements
- Internal coordination at NODC to move forward with NDBC archive “modernization”
- Agreement within NODC to promote netCDF/HDF more broadly as archival formats (with appropriate file- and collection-level metadata of course!)
- NODC OPeNDAP server online!  
<http://data.nodc.noaa.gov/opendap>



# Looking Forward

- Convene the IOOS Archive Working Group
- Work with NODC, NDBC, and the Archive WG to evaluate IOOS protocols and the level to which they support archive requirements,
- Then make recommendations!



# Questions?

(remaining slides are just  
for reference)

## 4.1.1.2 Ingest

# Ingest

The functions of the Ingest entity are illustrated in figure 4-2.

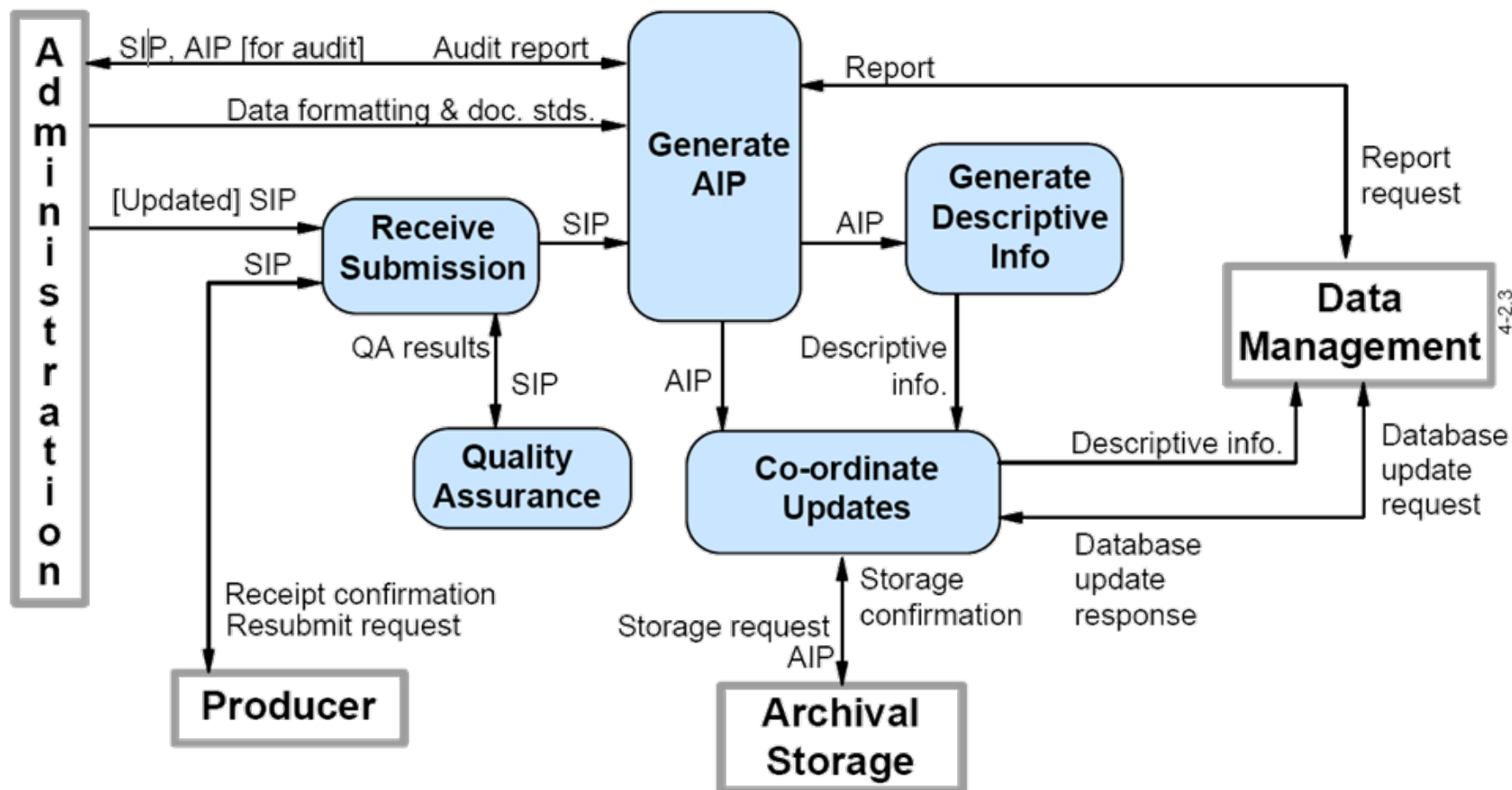


Figure 4-2: Functions of Ingest

# Archival Storage

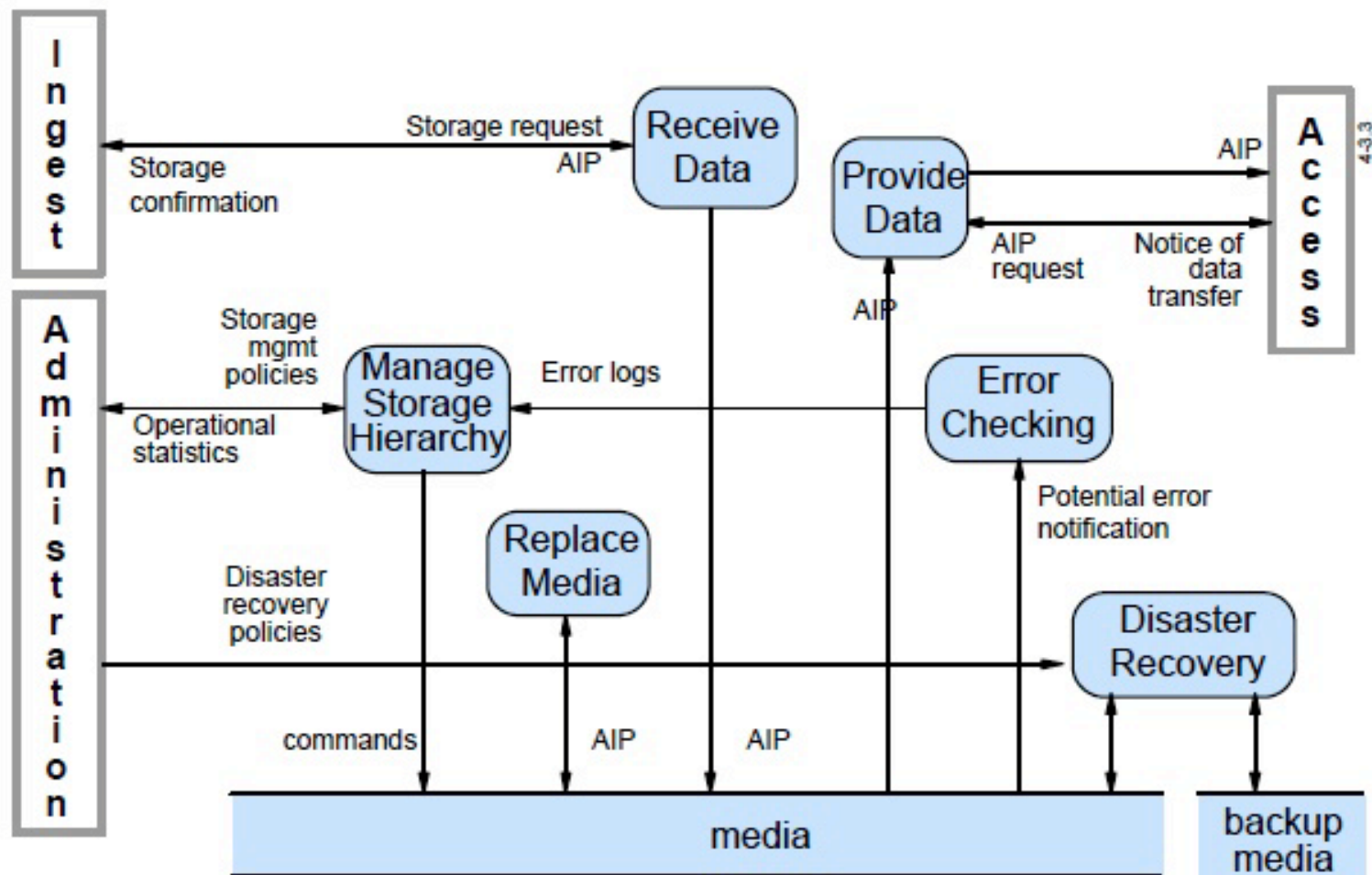
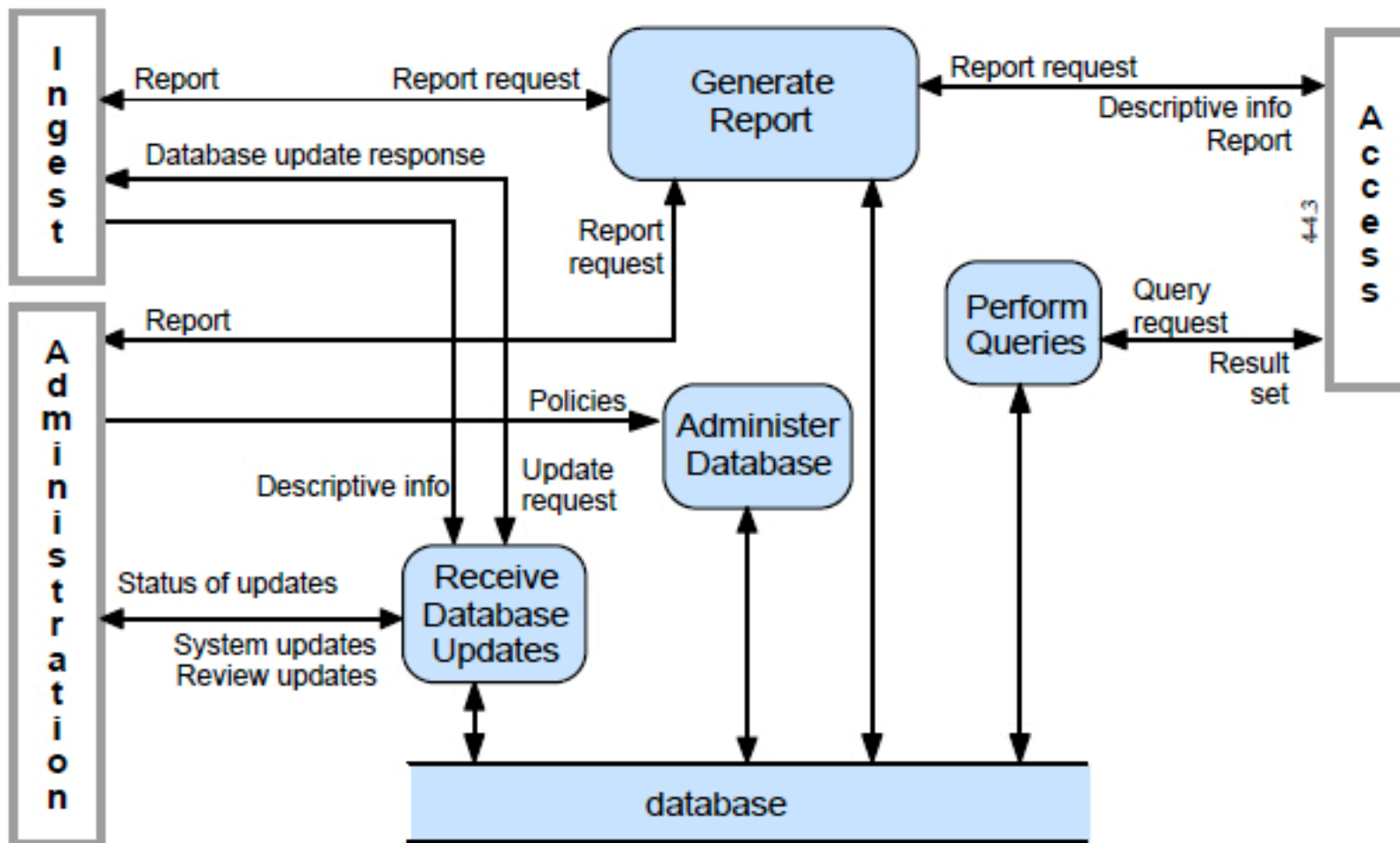


Figure 4-3: Functions of Archival Storage

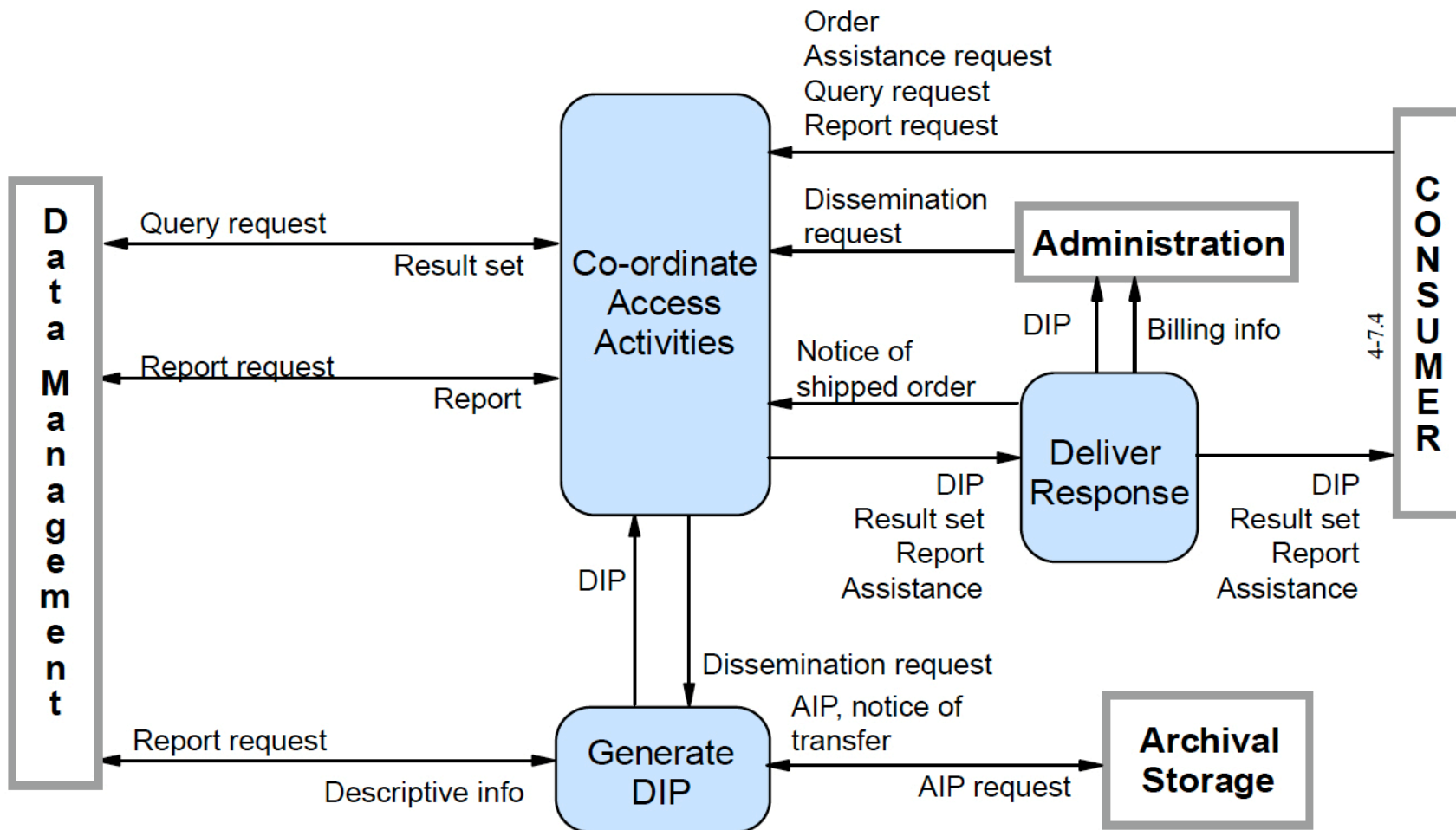
# Data Management



**Figure 4-4: Functions of Data Management**



# Access



**Figure 4-7: Functions of Access**

# Administration

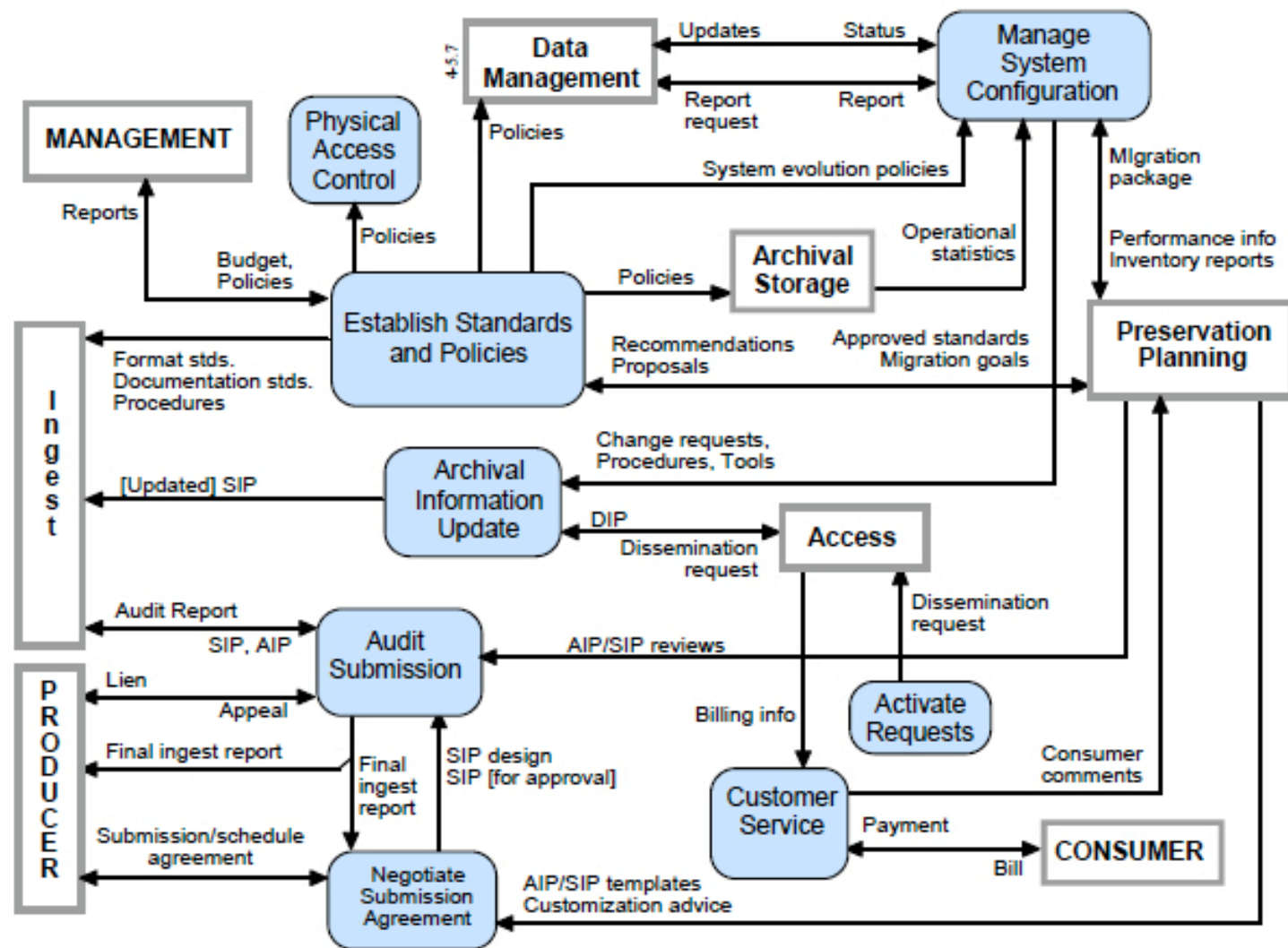


Figure 4-5: Functions of Administration

# Preservation Planning

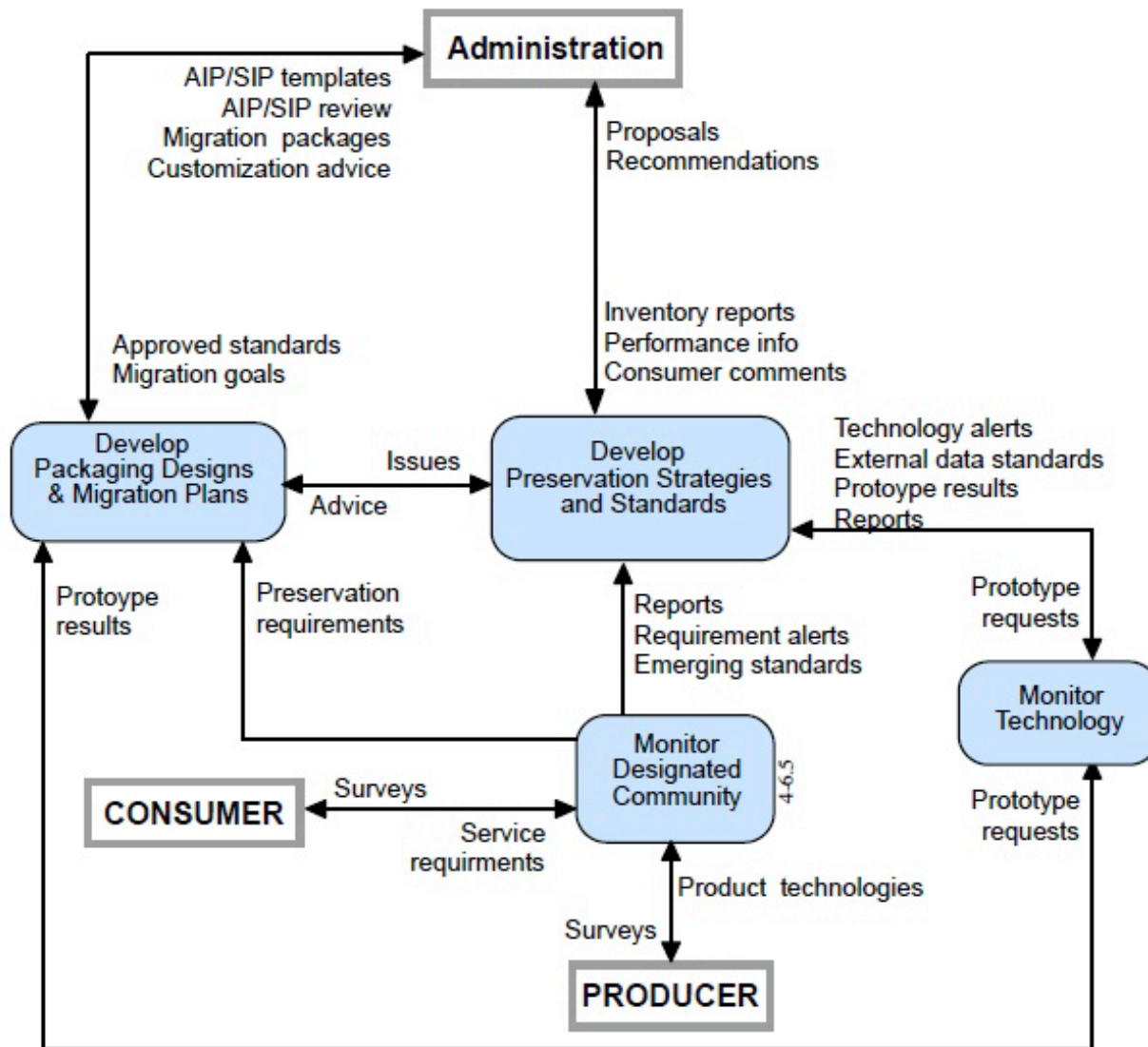


Figure 4-6: Functions of Preservation Planning